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intersection thereof. However, Juengling teaches a second live metal wiring patter (620) having only one linear part and therefore no corner at the intersection of two portions extending in different directions from each other, as required by claims 1 and 11. Therefore, Juengling cannot be considered to teach that both first portions of adjacent wiring are parallel to each other and the second portions of the adjacent wiring are parallel to each other, as required by claims 1 and 11. See Figure 16.

The Examiner relies on Wang to teach forming a protrusion at the corner of the wirings that faces the clearance between the adjacent wirings, required by claims 1 and 11. However, Wang teaches a pattern on a reticle that serves as a photomask. A serif (110) or protrusion taught by Wang is provided at a corner of a L-shaped reticle (100) for forming a diffusion area on a semiconductor substrate. However, the pattern of Figure 6 is not formed on a semiconductor substrate itself. Figure 7 shows a pattern of a diffusion area formed by the transferring of the reticle pattern to the substrate by using an optical proximity correction (OPC) method used in photography. The diffusion area cannot be considered to teach a protrusion, but rather a borderless contact (150) that is formed in the dielectric layer to make contact with the outer corner of a diffusion region (120). In fact, Wang teaches away from the device and method of claims 1 and 11 by disclosing that the serif (110) is provided to correct the shape of the outer corner of the diffusion area (120) from a rounded corner to a more rectangular shape. See column 2, line 64 to column 3, line 5 and Figure 7.

Since the combination of Juengling and Wang does not suggest the wiring configuration of claims 1 and 11, the references cannot enjoy the benefits of decreased clearance between wirings at the corners. The claimed wiring configuration suppresses occurrence of concavities and defects in the insulating protective film disposed on the wirings and the space therebetween (see page 7, lines 28-32).

Regarding claims 4 and 15, the combination of Juengling and Wang does not teach forming a protrusion at a corner of at least one of the conductive film patterns positioned at a crossing of two linear grooves constituting a T-shaped groove, as required by claims 4 and 15. Juengling teaches an active metal region (230), however it is not formed by the intersection of a transverse groove and a longitudinal groove (see Figure 12). Wang does not suggest a T-shaped

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groove. Therefore, the combination of Juengling and Wang does not enjoy the benefits resulting from decreased distance between the adjacent wiring at the intersection of the T-shaped groove. The claimed protrusion and groove provides suppression of concavities and defects in the insulating protective film disposed on the T-shaped groove.

Regarding claims 5 and 16, the combination of Juengling and Wang does not suggest a semiconductor device and method of manufacturing providing a protrusion that is formed at a part of the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring perpendicularly with respect to a direction that the second wiring extends, or at least one small protrusion that is formed at a part of a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring perpendicularly with respect to a direction that the first wiring extends, as required by claims 5 and 16. Rather, Juengling Figure 16 teaches a wiring comprising a live metal region (620) and two added live metal portions (631, 632). Neither of the wirings taught by Juengling (620/631/632 or 610) can be considered to include a small protrusion formed at either a part of the end or a part of a side that protrudes towards the other wiring perpendicularly with respect to a direction of the wiring extension itself, as required by claims 5 and 16. Regarding Figure 15 of Juengling, while live metal portions (520, 521, and 522) extend perpendicularly with respect to the direction of an existing live metal portion (520), the live metal portions (520, 521, and 522) cannot be considered to be formed either at a part of the end or at a part of a side, as required by claims 5 and 16. Wang does not remedy the deficiencies of Juengling.

Therefore, the combination of Juengling and Wang does not enjoy the benefits resulting from decreased distance between the adjacent wirings that suppresses occurrences of concavities and defects in the insulating protective film disposed on the wirings and the space therebetween.

Favorable reconsideration of claims 1, 2, 4, 5, 9-11, 13, and 15-18 is requested.

Claims 3 and 14 were rejected as being unpatentable over Juengling, in view of Wang, and further in view of Hartranft (US 5,846,874). Applicant traverses this rejection. Claims 3 and 14 should be considered allowable for at least the same reasons as claims 1 and 11, from which they respectively depend. Applicant is not conceding the correctness of the rejection as

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applied to the rejected claims. Hartranft does not remedy the deficiencies of Juengling and Wang, as previously noted. Favorable reconsideration of claims 3 and 14 is requested.

Claims 6-8 were rejected as being unpatentable over Juengling, in view of Wang, and further in view of Jain (US 6,653,717). Applicant traverses this rejection. Claims 6-8 should be considered allowable for at least the same reasons as claims 1, 4, and 5, from which they respectively depend. Applicant is not conceding the correctness of the rejection as applied to the rejected claims. Jain does not remedy the deficiencies of Juengling and Wang, as previously noted. Favorable reconsideration of claims 6-8 is requested.

Claim 12 was rejected as being unpatentable over Juengling, in view of Wang and Jain, and further in view of Wu (US 2004/0056351). Applicant traverses this rejection. Claim 12 should be considered allowable for at least the same reasons as claim 11, from which it depends. Applicant is not conceding the correctness of the rejection as applied to the rejected claims. Wu does not remedy the deficiencies of Juengling, Wang, and Jain, as previously noted. Favorable reconsideration of claim 12 is requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612)455-3804.

Dated: November 21, 2005



DPM:mfe

Respectfully Submitted,

A handwritten signature in black ink, appearing to be "Douglas P. Mueller", written over a horizontal line.

Douglas P. Mueller

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